

## REMARKS

Reexamination and reconsideration of the application are requested.

The examiner's rejection of claims 1-3, 5, 8, 12-18, and 20-24 as "obvious", under 35 U.S.C. 103, is respectfully traversed. The examiner rejects these claims as being unpatentable over O'Donnell (US 5,453,575) in view of Grunwald (US 6,254,543) or Jang (US 5,383,460). Claims 2-3, 5, 8, 12-18 and 20 depend from claim 1, and claims 22-24 depend from claim 21.

Claim 1 requires receiving at least two reference signals of imaging ultrasound waves that have been reflected from different regions in the anatomical tissue, wherein a transducer is moved such that the reference signals are reflected from different regions. Claim 1 also requires deriving a correction signal from the reference signals. Claim 1 additionally requires subtracting the correction signal from a signal of an imaging ultrasound wave to derive a corrected signal. Claim 1 further requires displaying an image using the corrected signal.

The examiner has acknowledged that O'Donnell does not teach motion of the transducer in accordance with deriving reference signals. However, the examiner argues it would have been obvious to use a moving transducer in O'Donnell based on the moving transducer of Grunwald or Jang.

O'Donnell uses the received waveform signals to attenuate the portions of the waveform signals received from the static features (i.e., the patient tissue) in the region and not from the relatively dynamic features (i.e., the blood flow) in the same region to achieve his purpose of imaging blood flow. See the abstract of O'Donnell. Suppose O'Donnell would receive a reference waveform signal from a first region, then move his transducer, then receive a reference waveform signal from a different second region, and then try to derive a correction signal from the two waveforms. It would be impossible for O'Donnell to identify static features from relatively dynamic features in the first region, and it would be impossible for O'Donnell to identify static features from relatively dynamic features in the second region. Only by comparing two (or more) received waveform signals from the same region can O'Donnell determine what has moved and what has not moved in the same region. Thus, O'Donnell would

not be able to detect blood flow from the two (or more) reference waveform signals from different regions due to a moved transducer. Incorporating the transducer movement of Grunwald or Jang into the invention of O'Donnell would render the invention of O'Donnell inoperative for its intended purpose.

Also, the examiner seems to be saying that since O'Donnell involves reference scan subtraction with no transducer movement (which is the same here as saying reference scan subtraction from the same region) and Grunwald and/or Jang involve alternatives to reference scan subtraction with transducer movement (which is the same here as saying alternatives to reference scan subtraction from different regions), it would have been obvious to modify O'Donnell to involve reference scan subtraction with transducer movement (which is the same here as saying reference scan subtraction from different regions). Applicants respectfully disagree. There is no motivation to make such a combination of references. Such a combination would be equivalent to saying that since O'Donnell teaches "A" (reference scan subtraction) + "B" (from the same region) and Grunwald and/or Jang teach "C" (alternatives to reference scan subtraction) + "D" (from different regions), it would be obvious to modify O'Donnell to become "A" (reference scan subtraction) + "D" (from different regions). Having one reference teach A + B and another reference teach C + D provides no motivation to modify one reference to become A + D.

Regarding claims 17-19 which set the correction signal to zero, O'Donnell does not teach, suggest or describe setting a correction signal to zero based upon an analysis of the corrected signal (claim 17), based at least in part upon an average amplitude of at least a portion of the corrected signal (claim 18), or when there is a change in temperature of a transducer (claim 19).

Claim 21 requires receiving at least two reference signals of imaging ultrasound waves that have been reflected from different regions in the anatomical tissue, and applicants' previous remarks, with respect to the patentability of claim 1 over O'Donnell in view of Grunwald or Jang are herein incorporated by reference.

The examiner's rejection of claims 1-8 and 12-24 as "obvious", under 35 U.S.C. 103, is respectfully traversed. The examiner rejects these claims as being unpatentable over Wu (US

6,036,650) in view of Grunwald or Jang. Claims 2-8 and 2-20 depend from claim 1, and claims 22-24 depend from claim 21.

As previously stated, claim 1 requires receiving at least two reference signals of imaging ultrasound waves that have been reflected from different regions in the anatomical tissue, wherein a transducer is moved such that the reference signals are reflected from different regions. Claim 1 also requires deriving a correction signal from the reference signals. Claim 1 additionally requires subtracting the correction signal from a signal of an imaging ultrasound wave to derive a corrected signal. Claim 1 further requires displaying an image using the corrected signal.

The examiner has acknowledged that Wu does not teach reference signal obtainance in association with mechanical transducer movement. However, the examiner argues it would have been obvious to use a moving transducer in O'Donnell based on the moving transducer of Grunwald or Jang.

The examiner seems to be saying that since Wu involves reference scan subtraction with no transducer movement (which is the same as saying reference scan subtraction from the same region) and Grunwald and/or Jang involve alternatives to reference scan subtraction with transducer movement (which is the same as saying alternatives to reference scan subtraction from different regions), it would have been obvious to modify Wu to involve reference scan subtraction with transducer movement (which is the same as saying reference scan subtraction from different regions). Applicants respectfully disagree. There is no motivation to make such a combination of references. Such a combination would be equivalent to saying that since Wu teaches "A" (reference scan subtraction) + "B" (from the same region) and Grunwald and/or Jang teach "C" (alternatives to reference scan subtraction) + "D" (from different regions), it would be obvious to modify Wu to become "A" (reference scan subtraction) + "D" (from different regions). Having one reference teach A + B and another reference teach C + D provides no motivation to modify one reference to become A + D.

The examiner's rejection of claim 4 as "obvious", under 35 U.S.C. 103, is respectfully traversed. The examiner rejects this claim as being unpatentable over O'Donnell in view of

Grunwald or Jang and further in view of Phillips (US 6,632,177). Claim 4 depends from claim 1, and applicants' previous remarks concerning the patentability of claim 1 over O'Donnell in view of Grunwald or Jang are herein incorporated by reference.

The examiner's rejection of claim 7 as "obvious", under 35 U.S.C. 103, is respectfully traversed. The examiner rejects this claim as being unpatentable over Wu in view of Grunwald or Jang and further in view of Hassler (US 5,245,586). Claim 7 depends from claim 1, and applicants' previous remarks concerning the patentability of claim 1 over Wu are herein incorporated by reference.

Regarding claims 13-19 which sets the correction signal to zero, O'Donnell does not teach, suggest or describe setting a correction signal to zero from time to time (claims 13 and 24), at regular intervals (claim 14), by election of the operator (claim 15), when there is a change in system conditions (claim 16), based upon an analysis of the corrected signal (claim 17), based at least in part upon an average amplitude of at least a portion of the corrected signal (claim 18), or when there is a change in temperature of a transducer (claim 19). Choosing weighting factors in equations 1-3 and 4-5 of Wu will not zero the correction signal R. Likewise, choosing a threshold level to set T to zero in the equation on line 48 of column 7 of Wu will not zero the correction signal R.

Claim 21 requires receiving at least two reference signals of imaging ultrasound waves that have been reflected from different regions in the anatomical tissue, and applicants' previous remarks, with respect to the patentability of claim 1 over Wu in view of Grunwald or Jang are herein incorporated by reference.

Inasmuch as each of the rejections has been answered by the above remarks, it is respectfully requested that the rejections be withdrawn, and that this application be passed to issue.

Serial No.: 10/824,624  
Attorney Docket No.: END5044  
Amendment After Final

Respectfully submitted,

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